



VIRGINIA WILDLIFE

MAY 1984

ONE DOLLAR

VIRGINIA WILDLIFE

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Jack-in-the-pulpit; photo by Bill Ivy of Don Mills, Ontario. Participants in the Mt. Rogers Naturalist Rally enjoy sights like this one on their pilgrimage each May. Read more about it beginning on page 3.

Back cover: A popular feature of the rally is a field trip on horseback. Photo by Amy Hauslohner, Troutdale.

by Amy W. Hauslohner

Pilgrimage to Mt. Rogers:

Education with Pleasure

Each spring over 150 people gather here for learning, fun and a renewed appreciation of our environment.

A field trip on horseback is a highlight of the weekend.

Have you ever seen (or smelled) the celebrated and succulent ramp? Observed beavers at work? Can you distinguish the song of the scarlet tanager from the lilting notes of the common catbird? Do you understand the workings of the fragile ecosystem which supports the salamander? Can you tell a beech from a birch, or a pine from a pin oak? Most of us, when we stop and think about it, have little appreciation or understanding of the workings of the natural environment which supports our human life on this planet.

For the past ten years, a group of dedicated amateur and professional naturalists have put together an event to remedy this woeful ignorance. On a crisp weekend in early May, teachers, doctors, carpenters, homemakers, young families—over 150 people from all walks of life—flock to an obscure little crossroads in southwest Virginia. On the slopes and in the shadows of Mount



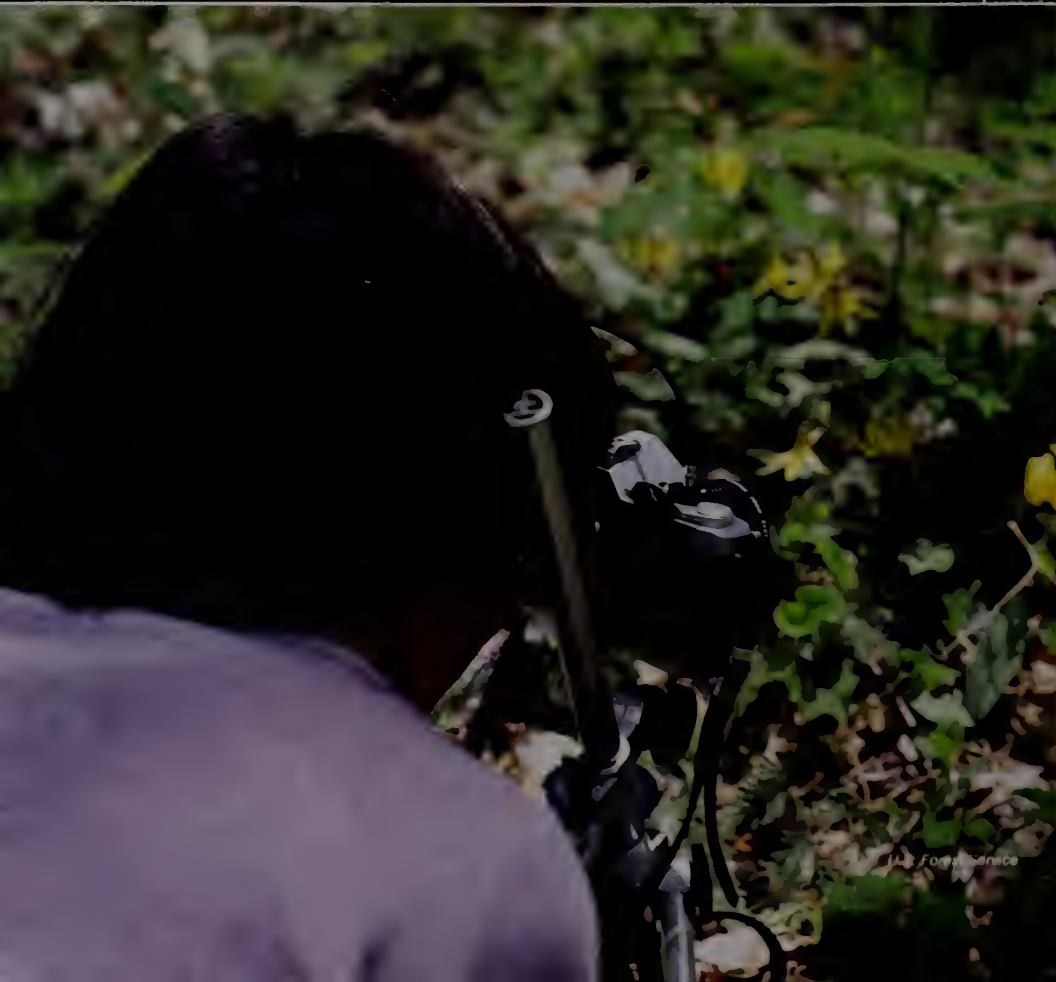
ou Hinshelwood



Bill Ivy



T.G. Scott



John Forsgren



Bill Portlock

Rogers, the highest point in Virginia, the assembled group will observe the mechanics and the beauty of multitudes of mini-ecosystems. With the help and guidance of professional volunteers, these individuals will be introduced to the natural world which surrounds them.

The Mount Rogers Naturalist Rally began life as a wildflower tour. The enthusiasm of its organizers expanded the affair in the fifth year to a two-day lecture/field trip combination, based on a similar event held in Elizabethton, Tennessee.

The rallies are sponsored and run by the Mount Rogers Citizens Development Corporation, a private, non-profit organization. The group was originally formed to allow local residents to effectively influence development in the Mount Rogers Recreation Area of the Jefferson National Forest. Today, the Naturalist Rally is perhaps the most important activity conducted by the Mount Rogers CDC. Together with the U.S. Forest Service, the CDC arranges for a prominent naturalist to appear as a guest speaker, organizes and provides gratis professional leadership for up to 16 field trips, makes reservations and contracts for a rally dinner, registers and assigns participants to field trips, handles the break-even finances, and mails over 1,000 brochures.

While a number of biologists, graduate students, and professional naturalists attend the rally each year, the event is truly tailored for the layman. Each speaker has been "personable and approachable," in the opinion of David Dunagan, Forest Service liaison. Lectures often take a tongue-in-cheek approach to the science of studying nature. Dunagan feels that the purpose of the rally, "to increase environmental awareness and the appreciation of nature and ecology," is well served by the lecture/field trip format.

Asked which rally was the best, Dunagan laughingly replied, "your first one." Most rally regulars would agree. While the same high standard of quality is maintained year after year, it is your first rally which gives you what Dunagan calls a "base level of ecological awareness." That first field trip opens your eyes to the intricate and delicate interrelationships in each microclimate of life in the wild. You sharpen your senses, and learn to observe the most minute details. Temperature, soil types, minerals, water availability, elevation—all affect the types of plant and animal life which can survive in any given spot. Marge Pedigo, treasurer of the CDC, calls the rally

"education—with pleasure!"

The Mount Rogers area is particularly rich in a diversity of climate zones, and is therefore an especially attractive spot for the study of natural history. The district marks the southernmost reach of many northern species, and the northernmost reach of many southern species. The peak of Mt. Rogers (5,729 feet) is in a sub-alpine climate zone, and is covered with a spruce and fir forest. A zone below this includes northern hardwoods such as beech, birch and maple. The next lower belt is known as the "Appalachian oak/hickory climax," yet a third woods type, rich in ferns. Each zone supports a different ecosystem, and it is remarkable to witness the changes wrought in a few hundred feet of elevation.

Also of interest in the area is the bald atop Whitetop Mountain, hotly disputed as being possibly the southernmost natural bald in the Appalachians. Located in nearby Sugar Grove is the genetically puzzling round leaf birch tree (*Betula uber*), one of only about 30 specimens on this continent. Past field trips have studied the round leaf birch and the post-glacial ecology of bald and glade, as well as 13,000-year-old fossils at a neighboring site in Saltville, Virginia.

Each rally is unique, yet their consistency brings enthusiasts back year after year. Registration takes place on Friday afternoon, sometimes followed by a short program such as insect collecting and identification. To prepare the amateur outdoorsmen for long hikes on the morrow, the Laurel Valley/Konnarock/Green Cover Community Association serves an enormous meal at 6:30. Fried chicken, parsleyed potatoes, green beans, cole slaw, baked apples, home-made rolls, cupcakes, tea and coffee make this delicious country meal a rally event not to be missed! The Konnarock Community Center will be the site for this year's meal and lecture. The floor in the Konnarock Spike Camp, the Forest Service building which formerly housed these activities, is no longer sound enough to support the numbers who attend the rally.

The 8:00 lecture hour allows a little time for the meal to settle, and for rally participants to become acquainted or re-acquainted. Budding ornithologists listen for bird calls in the gathering dusk.

An average of 150 people have attended rally lectures in past years. Speakers have included Dr. C. Ritchie Bell, director of the North Carolina Botanical Garden; Dr. Warren H. Wagner, University of Michigan professor of botany and natural resources; and Dr. Charles O. Handley, curator of mammals at the Smithsonian's Museum of Natural History.



Leonard Lee Rue

(Opposite page, clockwise from top left) Participants will see wildflowers such as the white trillium or pink ladyslipper; and there are plenty for the wildlife photographer. This mysteriously beautiful "classroom" makes learning a pleasure. (This page, above) If you're really fortunate (and quiet), you may catch a glimpse of a fawn.

"Leaders and participants alike are enthusiastically supportive of the novice. While in the field, you may be among the first to hear a new theory formulated, or be in on a rare find."

The lectures, while thoroughly accessible to the layman, do not condescend. Lectures are usually humorous as well as educational. In 1982, the audience was fascinated by the permutations of the genetic transfer of characteristics in plants through hybridization. Last year's lecture, "The Uses of Plants in Colonial Times," provided a warm human insight into the expression "necessity is the mother of invention." Field trip participants on the following day were especially eager to spot those indigenous plants which our forefathers used for medicines, dyes, food, and even shelter.

According to Ken Hale, chairman of the Rally Committee, this year's speaker will be Dr. Tom Cade of the Laboratory of Ornithology in Ithaca, N.Y. Dr. Cade is part of an ongoing program at Cornell University which is seeking to re-establish the peregrine falcon in the eastern United States.

Field trips begin at 8:00 sharp on Saturday morning, rain or shine. Everyone assembles at the Konnarock Spike Camp to sign up for the trips, and organize for departure. Each group will travel a short distance to a site pre-selected by the leader as being most conducive to its object of study. A second round of trips begins at 1:00 p.m., after a brown bag lunch at noon.

Field trip topics include birds, amphibians and reptiles, wildflowers and mushrooms, wildflower and nature photography, "leaf litter life" (centipedes and such), a nature walk for parents and children, and fisheries. This year's trips will also include "glades," a study of Appalachian bogs and the ecological effects of glaciation, led by Doug Ogle of Virginia Highlands Community College. Tony Scales of the University of Tennessee will lead a geology trip, and Dr. Cade will focus the bird trip on the falcon and its kindred. The trip led by the guest speaker has always proved to be the most popular.

Sturdy shoes and warm clothing are recommended, as mountain weather is changeable, and the hiking can be rough. A notebook is nice, to jot down names soon forgotten; so is a bird, plant, rock, or what-have-you field guide, to help you keep up with the graduate students on your trip. However, leaders and participants alike are enthusiastically supportive of the novice. While in the field, you may be among the first to hear a new theory formulated, or be in on a rare "find."

Birdwatchers can extend their life lists with such species as the least flycatcher, Swainson's thrush, or the indigo bunting. The warblers seen on one trip included the chestnut-sided, Canada, hooded, black-throated green, and

black-throated blue.

Wildflower enthusiasts will find hundreds of species in bloom. Fringed phacelia, painted trillium, false hellebore, Solomon's seal, bloodroot, wood sorrel, and cinquefoil are among the wildflowers commonly seen. And fortunate indeed are we that the much-touted ramp, that zesty wild onion, is in season during the Naturalist Rally. The stout of heart and palate may like to sample this delicacy along the way. Nutritionally, ramps were very important to the early settlers, providing one of the first available fresh vegetables in the spring.

In addition to the field trips conducted on foot, each rally features two four-hour horseback outings, one in the morning and one in the afternoon. Bob Duncan of the Virginia Game Commission and Dennis Danner, wildlife biologist with the Jefferson National Forest, lead a maximum of 10 persons per trip into the Mount Rogers high country. Participants may either bring or rent a horse. Riders receive a sampling of all the other trips, as they spot beaver, deer, and wildlife habitats; wildflowers; birds; trees and associated flora in various climate zones; and interesting geological formations.

The Konnarock community is located at the intersection of Virginia routes 600 and 603, northeast of Damascus in Washington County. Konnarock is easily reached from I-81 either by taking U.S. 58 east from Abingdon, or by taking state route 16 south from Marion to Troutdale, turning right on 603 from Troutdale to Konnarock.

Most rally participants stay at the Forest Service's Grindstone Campground, located on route 603 between Troutdale and Konnarock. Grindstone has bathrooms with hot and cold running water, and grills and picnic tables at each site. Sites have no hookups, but there is a dumping station. The overnight fee is \$5.00. There are motels in both Marion and Abingdon, but these are rather inconvenient to Konnarock. With the steep and winding roads, travel time from either town is about 45 minutes.

The registration fee for the Naturalist Rally is \$2.50 per person (age 12 and over). This includes the lecture and two field trips. Friday night dinner costs \$4.50 per person, and a reservation is required. Rental for the horseback trip is \$25.00, with registration by April 30th recommended. Rally information and registration forms are available from Mrs. Roger Pedigo, 399 Keller Lane, Marion, Virginia 24354. □

Jeff's First Trout

With some thoughtful preparation, your child's first trout fishing excursion can be pleasant, memorable—and successful.

story & photos
by Harry Murray



The day finally arrived for our trout fishing trip. Earlier in the winter I had promised to take my eight-year-old son Jeff along on one of my outings, to let him see how his dad spends so much time.

In planning for this trip I had seriously considered three factors. I definitely wanted the overall fishing to be enjoyable for my son. I was seeking a situation which would provide him with a challenge and, once this challenge was properly met, would be extremely rewarding.

I was not too concerned about the overall enjoyment of our day together because boys of that age seem to have a good time doing almost anything outdoors.

Seeking an adequate challenge which could be realistically handled was another matter. Jeff had done some spinfishing for bass and panfish and was learning to handle himself quite well in this area. It wasn't that I thought he could easily catch a bucketful of trout in our local put-and-take

stream, which was heavily stocked with hungry rainbow. Still, I felt this was too much like the fishing he had done the previous summer for warmwater species. I wanted him to see trout at their best.

I knew of one small mountain stream which held an excellent population of wild, stream-bred brook trout. The water level should have dropped back from its full banks of opening day to a more manageable level, but there would still be pretty good hatches of March browns and gray fox mayflies. Many of the brookies would still be out on feeding stations taking advantage of these flies.

Arriving at the stream, we found the condition just as I had anticipated. Now I had to put all of this strategy together. Jeff could handle a fly rod well enough to drop a fly fairly close to target if the distance was not too great. This did not pose a problem since most of the pools in this feeder stream were less than 10 feet wide.

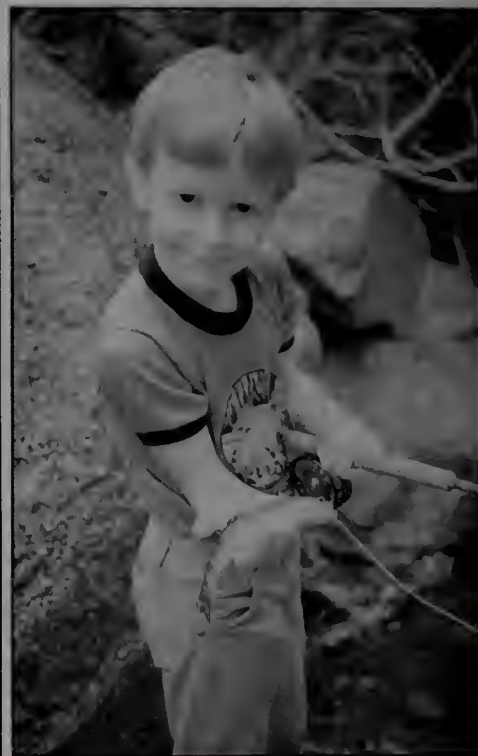


The one problem I did have was getting Jeff to approach the pools cautiously enough to prevent spooking the trout. He was so accustomed to the large bass streams and reaching out with his spinning outfit that the creepy-crawly approach needed here required some adjustments. Years ago I learned by trial and error that some of the least spooky and therefore easiest trout to take in each pool are located in the slow water just off to the side of the heavy current entering the pool.

I positioned Jeff on the near side of where one of these little shoots enters the pool. He cast his number twelve dry Royal Wulff across the fast water into the slow current on the far side. The fly had drifted only a few inches when a nice brookie rose to it. Jeff was slow in setting the hook and failed to hook the fish. Hoping the fast water between us and the trout might prevent him from being spooked, we decided to rest him a few

minutes and try again. This must have been a trout Mother Nature put here for young boys because the scene was repeated three more times. After the fourth missed strike, Jeff looked back at me and with a very determined look said, "If I had a net I'd get him." We did need the net but not in the way Jeff had meant. On the next drift the trout rose again to Jeff's dry fly and this time was solidly hooked and landed. Jeff's first trout was a beautifully colored, eight-inch, wild male brook trout. By the end of the day Jeff had landed five more trout on his dry Royal Wulff.

As our old jeep bounced down the mountain road headed back to civilization, Jeff was glowing with pride. There was no question in my mind that the overall trip had been very enjoyable for both of us. Jeff had handled the challenge of wild trout in such a way as to receive a reward in excitement and confidence far beyond anything I had anticipated. □

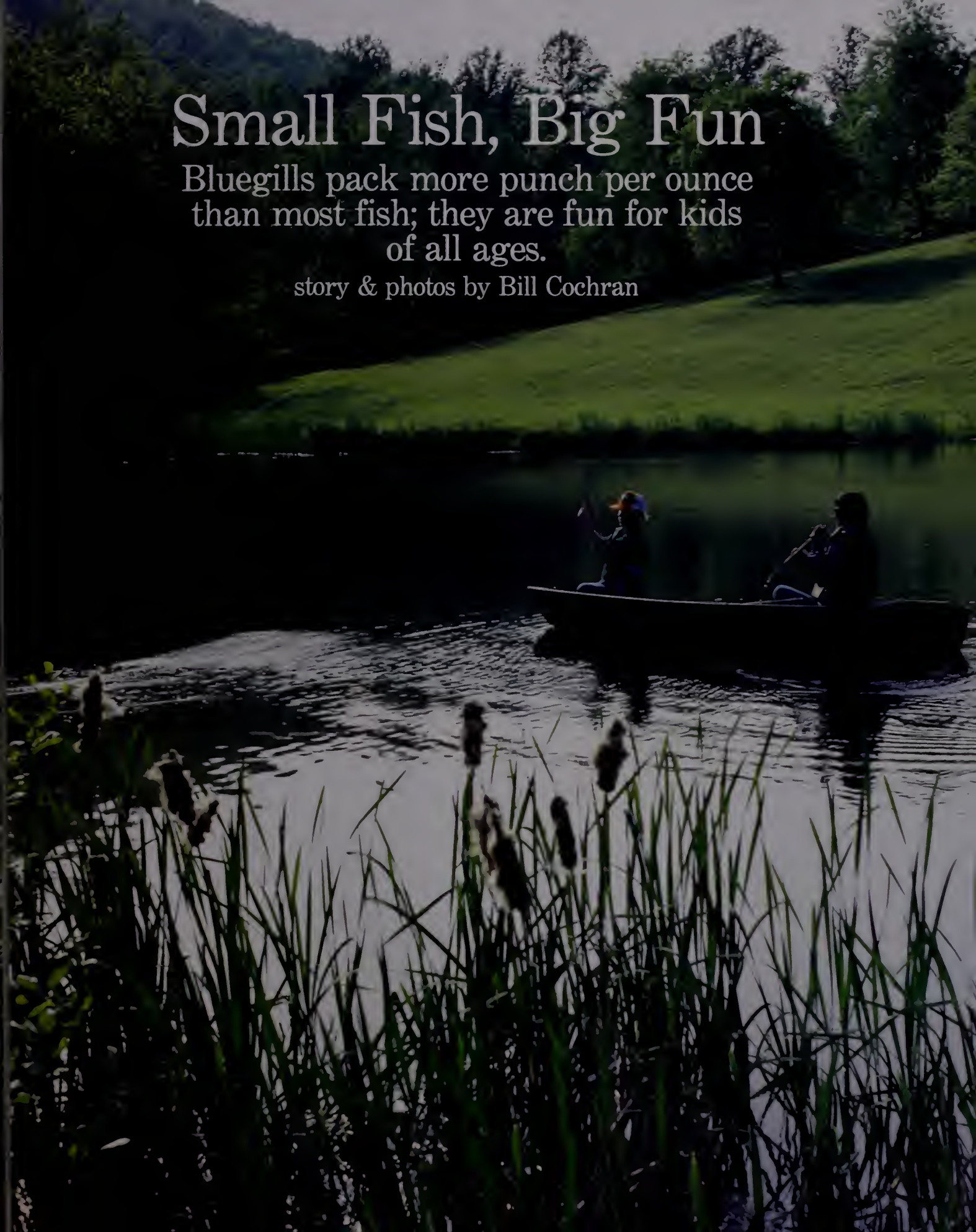


(Upper left) What better way to instill in your youngster a love of the outdoors than a trip to one of Virginia's trout streams? (Above) The flush of success: Jeff with his first trout, a wild mountain brookie.

Small Fish, Big Fun

Bluegills pack more punch per ounce
than most fish; they are fun for kids
of all ages.

story & photos by Bill Cochran







(Preceding page) Farm ponds offer ideal habitat for bluegills and an excellent spot for anglers to cast spiders for spawners. (Opposite page) The author enjoys bluegill fishing at Lake Moomaw. (Above) Realistic rubber spiders are outstanding bluegill bait. (Bottom left) Bluegills pack considerable punch to the ounce when taken on a fly rod.

Come springtime, when the water temperatures begin to press toward that magical 70-degree mark, I unlimber my fly rod for a delightful game of sending spiders after spawners. I'm talking about bluegill fishing.

You say bluegills are for kids. Too bad! If you happen to overlook bluegills in all the ballyhoo over bass, blues, stripers, trout and muskie, you do yourself a distinct disservice.

Sure, bluegills are for kids. Ask most freshwater anglers about the very first fish they caught and chances are excellent they will tell you it was a bluegill. Probably it was about the size of a 50-cent piece and not worth a penny to anybody else, but at the time they wouldn't have taken a million dollars for it.

Bluegills are for kids, all right. They are abundant. There's a zillion in every pond. Kids like that. They are easy to catch. It matters little if you are a barefooted beginner. They are willing to play the angling game with whatever tackle and technique you care to try. Kids realize it is more fun to be catching bluegills than sitting around dreaming about some heavyweight like a striper or muskie or citation black bass. Bluegills are friendly, even when bass thumb their nose at you. If you happen to grow tired of catching them and decide to skip rocks for awhile, that's O.K. Bluegills understand. Kids, especially, like that.

So you aren't a kid anymore. You own a \$10,000 bass boat. Your tackle box is as large as a suitcase and folds out like a Chinese puzzle to reveal an obesity caused by a gorging of jelly worms and jet-age crankbaits. You dwell in a world of graphite rods and graph recorders. What, possibly, could bluegills offer you?

Fun. The same fish that will tug at the float and at the heart of a youngster on his or her first fishing trip also will challenge the veteran angler casting an Orvis fly rod. Bluegills can wash your soul as sparkling as does a trout or bass. Bluegills, you see, haven't changed. You may have, but they haven't.

They still are bulldogs bearing fins. I have yet to meet many fish that pack more punch per ounce of fin and flesh. Not long ago I took a picture of a fisherman who had landed a 40-pound-plus muskie. I listened to the enticing story he told about the battle that had erupted. A few days later I was bluegill fishing. I got to thinking: If a bluegill were that size, what would it do to your tackle? Mother Nature was wise in keeping them a modest 4 to 10 inches. You see, early in life bluegills learn that if you put a flat surface against the water the resistance is unbelievable, even if that flat surface isn't particularly large.

Should you need some type of equalizer to add zest to bluegill fishing, the fly rod will do nicely. When I was a schoolboy I became fascinated with fly fishing. For a while I was a purist. Most of the time it was impossible for me to make some exotic foray to a quality trout stream, so I'd walk down to the nearby farm pond and catch bluegills on nymphs, wet flies and dry flies.

I have since changed my thinking on what makes the best bluegill fly patterns, but there is no question in my mind that ponds still are the top spot to catch bluegills. If you don't own a pond, it is prudent to cultivate a friend or two who does. Good ponds make good friends. They are to be savored like prized grouse hunting coverts. You never get too many, so you'd best treasure and nurture the ones you have.

Bluegills prosper in ponds because these modest bodies of water offer the kind of still, fertile habitat that produces abundant food, ample spawning opportunities and enough cover to protect young fish. Smaller lakes also can fill this bill, as do occasionally some sluggish streams and larger impoundments. The bigger bodies of water that have yielded quality sport during recent years include Chickahominy Lake, Lake Chesdin and Lake Suffolk. Sometimes a new impoundment will offer outstanding bluegill fishing during its early years. Lake Moomaw presently can be included in that category.

About the biggest problem with bluegills is keeping their population in balance, something you strive to do

with heavy fishing pressure and an ample number of predators like largemouth bass. If bluegills overpopulate their habitat, the result is a large number of stunted fish, none of them much bigger than a potato chip. So even in this era when catch-and-release wisely is preached for most species, normally you can keep all the bluegills you want with no undue pangs of conscience.

In the spring, when bluegills move onto their spawning areas, they become eager to strike just about anything that falls, leaps, swims or crawls their way. Indeed, most of their days are spent beholding their habitat through large, dark eyes with the idea of beating out their buddies when food appears.

While inhabiting their springtime shallows, bluegills are particularly adept at striking the offerings of a fly fisherman, because, after all, they are more oriented to eating insects than minnows or other finny-type forage.

When fly fishing for bluegills you don't need to be fussy about patterns. More important is keeping your fly within striking distance of these pugnacious characters. Most of the time they even will forgive you when your approach is a tad sloppy, something that can send a trout into hiding for the remainder of the day.

My favorite pattern is a rubber spider, the ones that have the sponge-rubber bodies and wiggly rubber-band legs. Cast them out onto the tranquil surface of a pond and those legs twitch seductively at the slightest movement. Any bluegill alert for a meal will rip his scales off to suck one in.

The soft body of a spider especially is helpful, since sometimes a bluegill's determination is bigger than its mouth. There is little problem when a bluegill gums the spider or gives it two or three investigative smacks before taking it. It feels squashy and alive, just like natural food.

There are two types of spiders, those that float and those that sink. I prefer the floater, but occasionally find it more productive to use the soggy, sinking type. Color isn't all that important. I generally select a black, but have had success with about any color tried.

Most of the time my thoughts are on golden brown. That's how my catch ends up in the frying pan. Lip smack for lip smack, bluegills are about the finest fish you can eat.

My favorite method of preparing them is to make boneless fillets by scaling the fish and separating the flesh from the rib cage and backbone with a sharp knife. Leave the skin on.

That's right. Bluegill fillets. Fish seven inches or longer will provide two fillets that are big enough for a couple of succulent bites.

The fillets can be dipped into a batter made from an egg or two and a pinch of sugar. When the pieces are thoroughly coated, give them a dusting of corn flakes that have been very finely crushed with a rolling pin. Fry the fillets in hot oil until golden brown on both sides.

If you have extra fish, they will freeze well. I soak both sides of the uncooked fillets in fresh lemon juice squeezed onto a dish, then wrap well and freeze.

While we have talked about bluegills, many of the same good things can be said of their cousins, the pumpkinseed, redbreast sunfish, green sunfish, redear sunfish and others. They are all are fine, finny fellows. □

The *OUTDOOR* G O U R M E T

If you think of “outdoor cooking” as warming a can of beanie-weenies over a campstove, or barbequing hot dogs on a grill in the suburbs, you have plenty to learn.

by Martha Sutton

illustrations by Jack Williams



Fishermen, hikers, canoeists and others will soon take to the outdoors (if they haven't already) as the weather warms. Many will make camp and spend the night under the stars. What about meals outdoors?

If you're tired of roasting hotdogs, frying hamburgers and toasting marshmallows, or if you're looking for ways to add flavor to the meals on your next hunting, fishing or hiking trip, this article was written with you in mind. You can learn firebuilding and how to prepare a quick breakfast, a simple hot lunch and a four-course dinner. Or, if you're already an outdoor cook, read on for a refresher course.

A good cooking fire is best started with softwoods such as pine, because they light easily. When the fire has started, add hardwoods to minimize the smoke and keep the fire burning longer (fig. 1).

If you've decided to break away from the backyard barbecue and venture into the world of "real" outdoor cooking, you'll need a replacement for the traditional grill. Try putting the cooking pot on the rocks that surround a small fire (fig. 2). Or dig a narrow, shallow trench for the fire (fig. 3) and straddle it with the cooking utensils.

Regardless of how you set up the fire, the pots and pans you use over the fire will get a layer of black residue from the smoke. Coat the outside of the utensils with liquid soap or dish detergent before cooking, and the carbon will easily wash off with water when you are finished.

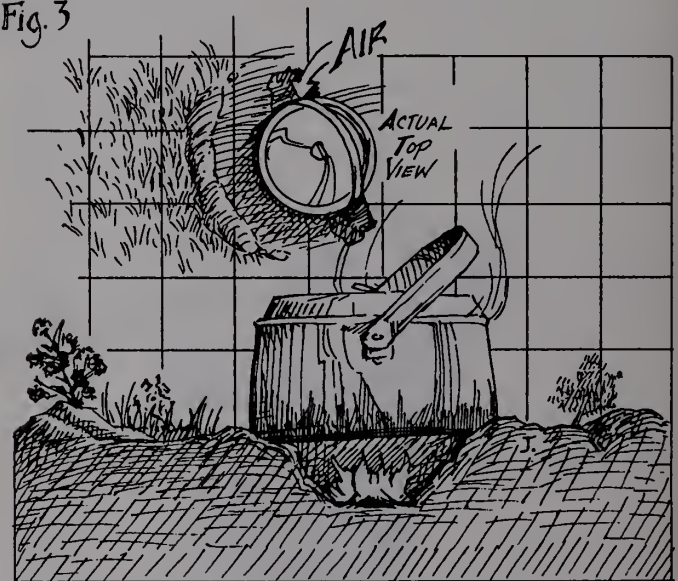
But one simple breakfast can be prepared without getting your pots and pans dirty. A vagabond stove (fig. 4) is great for frying a quick breakfast of bacon and eggs. With a pair of tin snips, cut a rectangle from the top of a no. 10 can. Near the bottom of the opposite side, cut a triangle from the can. Invert it over a small fire, which can be fed through the rectangle while the smoke goes out through the triangle.

A quick hot lunch of a hamburger, a potato, an onion and a carrot can also be prepared without getting your pots and pans dirty. Peel the potato and the onion, cut the potato into strips and slice the onion. Scrape the carrot and cut it into sticks. Put these with a four-ounce patty of hamburger on a piece of foil and fold them into a secure package to cook on the coals for 15 minutes.

Fig. 1



Fig. 3

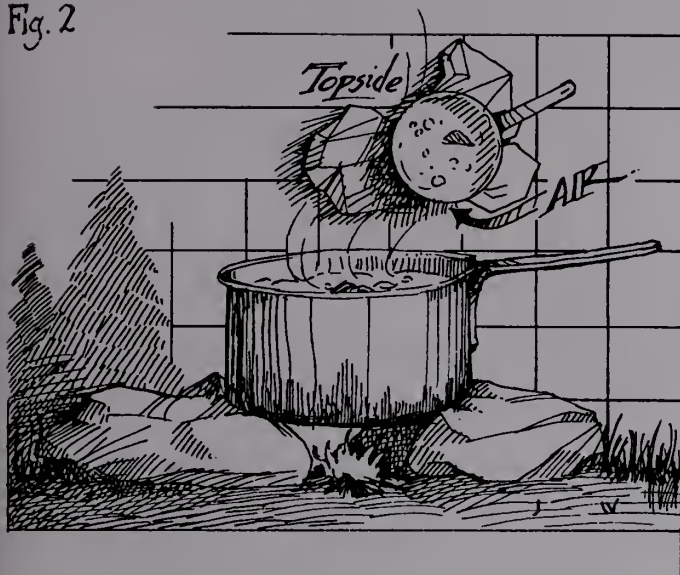


A dinner of vegetables, bread, meat and dessert will take more time, but, if prepared properly, could be more than worth the wait.

Corn and potatoes are particularly well-suited to foil cooking. Strip some of the outside husk from an ear of corn. Opening the inside husk, remove the silk and spread butter on the corn. Replace the inside husk and roast the corn in foil for about 20 minutes on the coals, turning it frequently.

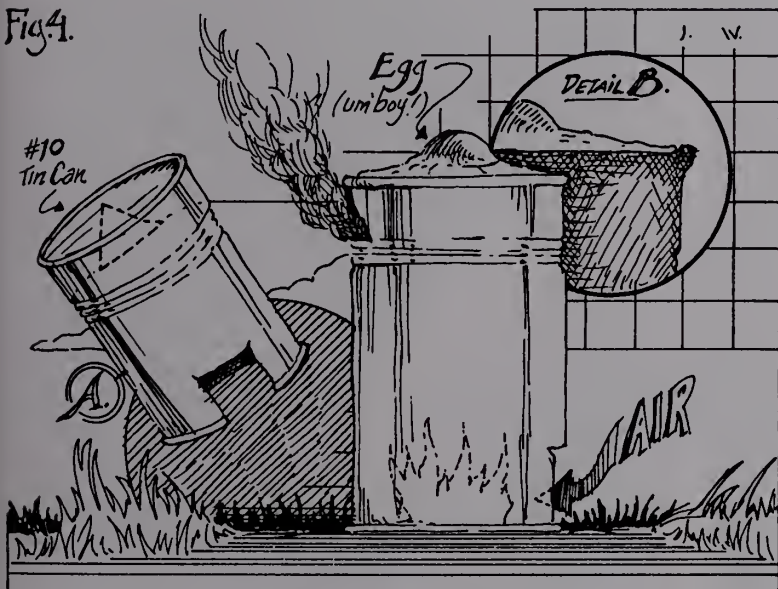
Potatoes can be wrapped in foil and baked in the coals of a fire just as they can in an electric oven. But you don't need to limit yourself to foil when preparing potatoes outdoors. Hashbrowns are another easy outdoor

Fig. 2



(Far left) A good fire is essential to the outdoor gourmet; your choice of wood, as well as proper circulation are important. (Left) In place of a "grill," try balancing a pot on two rocks over a fire.

Fig. 4.



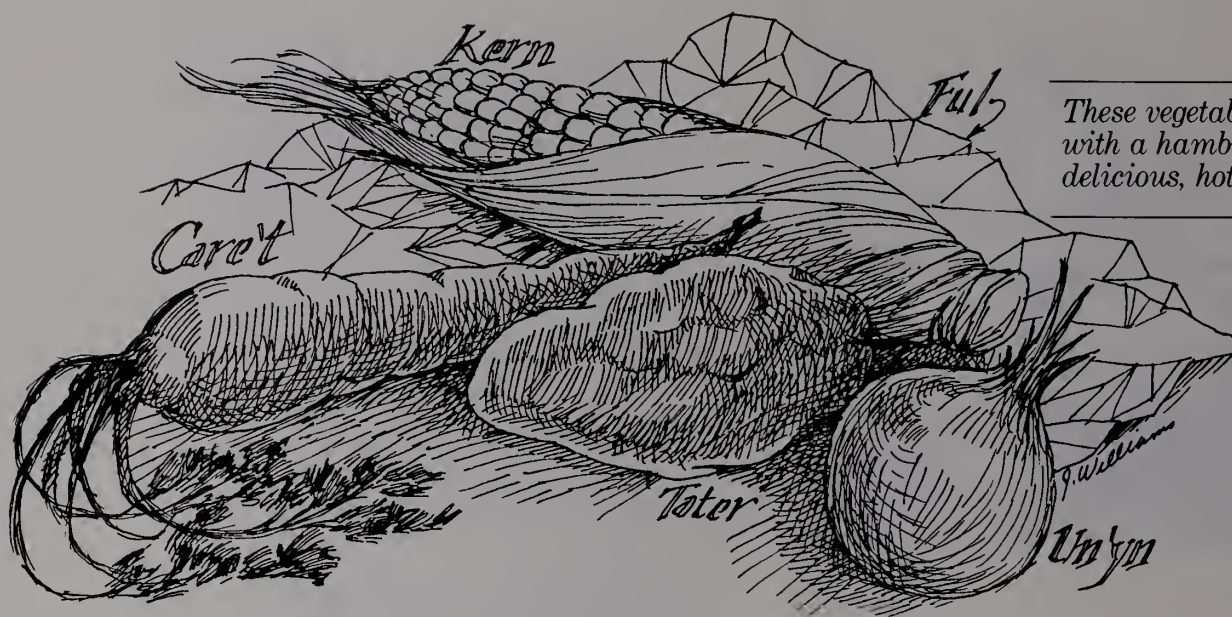
(Far left) Another alternative to the traditional grill is a narrow, shallow trench. (Left) Cooking breakfast on a can means no dirty pots and pans.

dish. Slice the peeled potatoes into shoestrings or rub them through a coarse grater. Heat 3/4 cup of bacon fat in a skillet and add the potatoes. Cook them slowly, keeping the fillet cakes away from the sides of the pan. Turn them when they are brown on the bottom. When both sides are brown, add salt and pepper and serve.

Another vegetable dish, bean-hole beans, is unique to cooking outdoors. This long-time favorite of outdoorsmen is, as its name implies, a way of cooking beans in a hole in the ground. Dig a hole three feet deep and three feet wide, and line the bottom and sides with rocks. Build a big fire over the hole so that the coals and ashes

will drop into it. Keep the fire burning several hours.

Meanwhile, wash a pound of large, white dry beans and boil them in three inches of water. Pour the water off and boil with fresh water. Pour this off, add fresh water and cook about 40 minutes. Cut a half pound of salt pork in half and score the skin with deep cuts. Put a piece of the pork in the bean pot and pour the beans over it. Add and mix a tablespoon of powdered mustard, 1 1/2 tablespoons of sugar, one tablespoon of dark molasses and a half tablespoon of salt. Bury two medium-sized sliced onions and the rest of the pork near the top of the beans, add enough boiling water to just cover the beans.



These vegetables, baked in foil with a hamburger patty, make a delicious, hot and easy meal.

Lower the covered pot into the hole, leaving a wire attached and stuck straight up so you can easily pull the pot out when the beans are ready. Poke ashes and coals around the pot and put a rock on top to hold the cover down. Then rake dirt over the hole and seal it with sod. Let it cook about 12 hours.

Since the beans take so long to prepare, you'll have less time to bake the bread. Bannock bread is a simple one to try because it uses few utensils and little time. Mix a cup of flour, a teaspoon of baking powder, 1/4 teaspoon of salt and one or two tablespoons of water in a bowl, pot or perhaps a sturdy plastic bag. Peel an inch-thick green stick of sweet wood, such as birch or maple, and stir until you have coated the stick with dough about a half-inch thick and four or five inches long. Prop the stick in the heat of the fire until the dough has baked.

The preparation of the main course doesn't have to be dull, either. The two dishes described here have been chosen especially for fishermen.

For broiled fish, boil 1/4 teaspoon of salt, one cube of butter, one tablespoon of lemon juice and 1/4 cup of white wine. When the mixture has cooled, marinate two or more fillets in it and double-wrap each in aluminum foil. Place the packages on the grill or the coals for 15 to 20 minutes. Then open them and eat the fish directly from the foil.

If you don't have the necessary utensils and ingredients with you for broiled fish, a baked trout on a rock can be a good alternative.

While heating a flat dry rock in the fire, clean the trout by removing its head and splitting the body down the middle, but don't separate the two sides. Remove the rock from the fire with a stick and sweep the ashes off with an evergreen bough. Put the fish, skin side down, on the rock and put salt and pepper on it. Let it cook until the skin bakes away. The skin sticks to the rock so let the rock be your plate as well as your oven.

Finally, no outdoor meal is complete without dessert. Apples and bananas, cooked in aluminum foil in the coals, are as tasty as they are nutritious.

Core each apple, leaving about half an inch at the bottom intact. Peel each about a third of the way down and fill the holes with sugar, butter and a dash of cinnamon. Wrap in foil and bake for about an hour.

Bananas don't take quite so long. Peel one side of a banana and cut a wedge from it. Fill the area with chocolate chips and pieces of marshmallows, then replace the wedge and peel and wrap in foil. Cook them about 10 minutes and eat with a spoon.

Breakfast and lunch, as we have seen, don't need to be messy or take a long time, and dinner can be the highlight, rather than the chore, of the day. If you try these ideas on your next outing and are pleased with the results, maybe, with experience, you can create your own way to make the most of your time and supplies when camping. □

SOUND:

Wildlife Survival Tool

Wildlife uses sound in many ways:
to learn about their surroundings,
to provoke, attract, repel or
inhibit other wildlife.

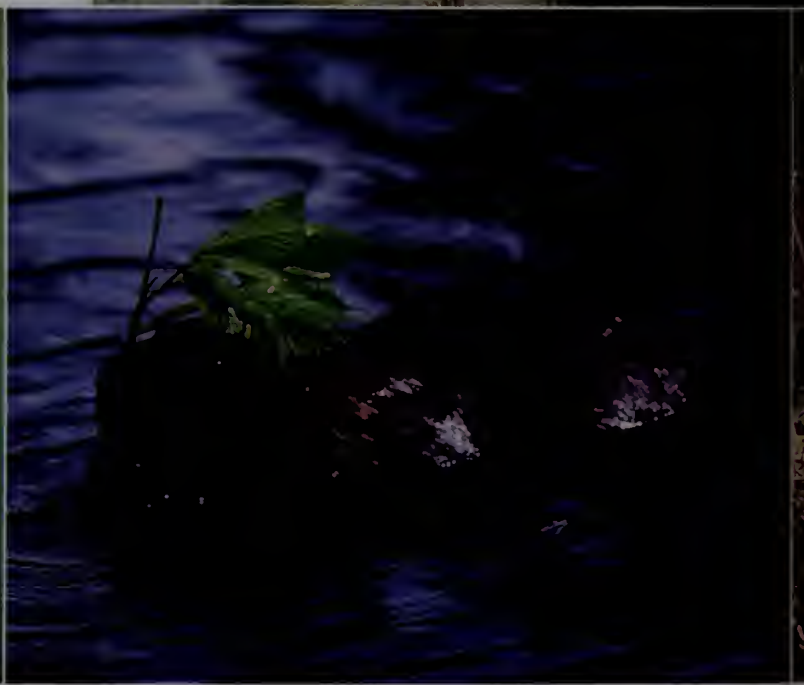
by Gregory Mertz

Sound is a significant tool for many different wildlife species. Bats are "echo-locators" (previous page); they use a form of "sonar" to locate prey and other objects. Many animals use sound in courtship rituals; this male toad (right) is trilling to attract a mate. (Far right) Birds such as these barn swallows use sound in many ways. Juvenile birds make noises in order to gain protection—or food—from their parents. (Below) Birds also sing to attract mates, declare territorial limits, warn their young; this is a red-winged blackbird. (Below center) If you've ever heard the startling sound of a beaver slapping its tail on the water, you know that this warning sounds like a gunshot. (Below, far right) Groundhogs are sometimes called "whistle pigs" because of the high-pitched whistle they use as a warning.

Gary Gaston



Bill Ivy



Michael Gadomski

Night was melting into dawn when the four raccoons found the cache of food in a crumpled old lunch bag. After a few snorts, the mother coon tore the bag with her claws; it yielded a banana peel, a half-eaten salami sandwich and a Twinkie wrapper. The three little ones growled and snarled at each other over the rights to the wrapper while the mother chewed the salami as if it were going to escape.

The smallest of the young ones, intimidated by the aggressive snarls of the other two, backed off from the group a few feet. There, he chanced to find a moth spiralling towards him in its escape from a brown bat swooping overhead. The young coon, testing his agility, jumped and swatted at the moth, trying to knock it out of the air. Without success and overcome by a tremen-

dous itch, he sat down with a thump and virgorously scratched his snout.

The little coon paused and listened to the familiar croaks of bullfrogs, the high-pitched trills of crickets, and even the first few chirps of an early bird. Then he realized his family had begun to move on. He chirped to his mother who turned and waited for him.

The mother coon quickened the family's pace as they heard a distant boom, a low grumble, then a fainter one seconds later. The raccoon family nestled together in their hollow log home and a hush fell over the woodland until the thunderstorm passed. Only then would the creatures of the day begin their noisy racket. The animals of the night would sleep until sunset.

Animals with ears, such as the raccoon, constantly



Gregory Meritz



David Davis

monitor the sounds in their environment to audit natural events and to fathom the movement and presence of other creatures. Hearing is one of the most important evolutionary innovations in the animal kingdom. It is one of the five senses through which animals experience the outside world. The benefits of sound and hearing as a tool of survival are largely the result of the physics of sound waves.

There is an interesting fact about sound that makes it an exceptionally useful tool. When a sound runs into an obstacle it can either pass around or bounce back from it. The determining factors are the relative pitch of the sound and the relative size of the obstacle. Low-pitched sounds pass around small objects. These sounds of a singing bird hidden by underbrush pass by leaves and twigs

to be heard by an ear. High-pitched sounds echo from large objects. The squeaks of a flying bat bounce off a fine wire and tell of the obstacle's presence.

Most animals with ears hear low-pitched sounds. Only a few hear very high-pitched ones. For animals with low-pitched hearing, a clear view or straight line path is not needed. As a result sounds can be heard in underbrush, woodlands and fields where leaves and branches get in the way. This explains why sounds can be heard in light and dark. So day or night sound is a good tool.

Hearing, by itself, alerts an animal to danger or possible prey, but sound production is an equally dynamic tool which can be used for competition, aggression and protection. Most animals with ears also have some means of making sound.

Animals produce sound for two main reasons. The first is communication which generally uses low-pitched sounds. The second is echo-location which uses high-pitched sounds. Unlike communication, echo-location is intended for only one animal's use.

Echo-location is a means of pinpointing exactly the objects in the animal's immediate surroundings. The animal emits high-frequency sounds which readily bounce off barriers in the surroundings and reflect the location, size and shape of the objects.

The most familiar echo-locaters are bats. Bats shout sounds through their mouths or hum sounds through their noses. Some bats send out short, staccato beeps. Others spray long sweeps of sound across their flight direction. Then they monitor the echoes that return, and are able to judge what kind of object is in front of them. In this way bats throughout North America locate and eat millions of insects nightly during the warm months of the year.

Night-flying insects such as moths, midges, mosquitoes, caddis flies, mayflies, and a host of others fall prey to the insect-eating bats. These insects fly at night to avoid capture by predators with vision like the diurnal birds, amphibians and other insects. But bats have taken advantage of this by developing their ability to echo-locate. It is not always an easy catch for the bat though, because many insects have developed countermeasures to escape.

For example, moths have fuzzy, actually scaly, bodies that absorb sounds to some degree. So the moth goes undetected by the bat because of a weak or absent echo. And some moths have ears to detect the high frequency squeals of the bats. As a bat approaches, these moths take a spiralling dive in hopes of escaping their clutches.

Some research shows that the woolly bear moth, the end result of the black and brown caterpillars that you see in the fall, has evolved a beep that actually chases the bat away. Apparently the frequency of the beep portends some dire happening to the bats. Another group of insects, the lacewings, simply drop to the ground out of reach of the flying bats.

There is at least one other pitfall for bats. Fog is to a bat as blinding light is to a pilot. The tiny droplets of water in fog are about the right size to vibrate with squeaks of the bat's radar. When a bat enters fog its squeaking causes the droplets to vibrate. The droplets then re-emit the same sounds the bat is making in all directions. To the bat it must seem like a million little echoes coming back at him. Bats, as you might imagine, avoid fog.

Bats are not the only echo-locators. Whales, dolphins, porpoises, the oil birds of South America and the short-tailed shrew of this area all use echo-location. In each instance echo-location serves the individual.

Communication, on the other hand, always involves at least two individuals of the same or different species. There are four major categories of animal communication: repellent, attractive, provocative and inhibitory. These classifications are based on the behavior that results from the communication. The evening trill of a cricket not only serves to attract a mate and to repel a rival, it can simultaneously alert a predator to its whereabouts.

An "attractive call" is one that brings others to the caller. That is how many animals attract members of their own species. In many cases the attractive call is used in courtship to draw dispersed members of the populations to the same location for mating.

A familiar example in the temperate zone of North America is the springtime calling of frogs, peepers and toads. Near the beginning of their individual seasons, the males of the species make their way to lowland swamps. There they position themselves advantageously at water's edge to view the procession of females who respond to the collective calls of the males. On sighting a passing female a male abandons his position and swims towards his potential mate. If the male is successful in winning the female's favor, which is probably not too difficult, he grasps her around the waist and starts amplexus.

Male and female toads are rather similar in appearance, especially in the murky waters of a swamp. Occasionally a stationary male will mistake a passing male for a female and will attempt to mate with him. This act evokes a strong vocal response on the part of the passing male. The transgressed male's chortles signal the aggressing male that he has made a mistake. This use of sound is the opposite of attraction. It is instead an example of sound used to repel another animal.

Violated toads are not the only animals adept at repellent sounds. A growl, snarl or a hiss often repels would-be predators in the animal world. Many animals give that loud growl to increase their ferocity in the eyes of an aggressing foe. The force of the sound is often a ruse to cover a lesser ability to defend oneself. The growl of a cornered grey squirrel and the shriek of a captured cottontail certainly outweigh their size.

Sometimes repellent sounds are used for competition between members of the same species. The little raccoon on his early morning foray was repelled by the snarls of his siblings when they tussled over the Twinkie wrapper. Robins, cardinals, mourning doves and many songbirds sing in the morning and evening, especially during the mating season, to declare their territories. Rival birds hearing the calls of their own species stay away. Through the loudness and clarity of the calls, nesting pairs of birds of the same species space themselves in the wild so that food and water do not become scarce.

Some animals use the same sound to simultaneously attract and repel. For example, the rapid drumming of a male woodpecker is music to a prospective female looking for a mate. To a rival male, however, it is a distinct message: "keep off my turf." The same system works for songbirds, crickets, frogs, and a host of other species.

There are some species of birds that apparently feel

the pressures of competition more severely than do others. They have developed methods of repelling not only members of their own species but those of other species, too. The famed singing of mockingbirds is this style of territorial protection. A local mockingbird will mimic any sound in the neighborhood that he feels is that of another songbird which would mean competition for food and space. He loudly proclaims his territory by repeating the songs of others over and over.

Catbirds are similar but not so tenacious with a song. They will repeat it only twice before moving onto another species. This probably has the effect of maintaining gained territory more effectively than the mockingbird's method.

Sound mimicry may also be important to some groups of moths. Several species are known to produce an ultra-frequency click that is believed to warn bats of their bad taste. Moths from other species are believed to mimic the first group in order to gain the same benefits of protection. The interpretation of the reserach on this matter is not yet clear, nor is all of the evidence in.

In terms of resulting behavior, attractive and repellent sounds are opposites even though both can be elicited by the same call. The last two categories of sound behavior are opposites, too. Provocative sounds, as the name suggests, provoke an action in another while inhibitory sounds prevent an action in others.

An example of provocative sound is the calling of helpless young to gain protection, assistance and food from the parents of birds and mammals. The reverse is also true. If a parent perceives danger, a command can be given that instructs the young to behave in a particular fashion. Many songbirds can command their young to flee or freeze by intoning a vocal message. Provocative sounds are also used by bullfrogs who are under the leadership of a local "captain." When he starts to call, the other males in the area will add their own voices to his. If he does not call first, though, the group will remain silent. Crows cawing at the sign of approaching danger, however, provoke flight not only in other crows but in squirrels, chipmunks and some songbirds. This is an example of communication between species, although it is probably unintended by the crow.

Inhibitory sounds stop aggression in others of the same species. The feeding habits of some mice are so automatic that adults would eat their young if they were not stopped by the ultrasonic squeaking of their offspring. Some crickets exhibit a similar system of inhibition but it is used by the males to restrict aggression among themselves. There is a pecking order among crickets and the hierarchy is preserved by the calling of the dominant male. In his absence the hierarchy is restructured according to the results of fighting spars. Deafened crickets will attack each other continuously.

From crickets to bats, from frogs to raccoons, animals of all kinds have capitalized on the physics of soundwaves. Hearing serves as a useful tool of survival. But hearing is more than that: it adds a dimension to living. For the young raccoon it is the many voices and sounds of the woodland on an early morning adventure; for humans it is music, the familiar voices of friends and family, or the comforting noises of our neighborhood; and for a frog it is the collective voices of a pond's chorusing males. For those animals who can hear, sounds tell them about their world. □

VIRGINIA WILDLIFE



SUCCESS

At Brookneal

*The formula for raising
60 million stripers a year.*

by Mel White and Bill Neal

(Above) The business at Brookneal is stripers, and business is booming. (Right) Once the fry are hatched, they are transported to rearing ponds, then to Virginia's lakes; the program has been so successful here that fry are also exported to other states.

It was a dark and stormy night. A shot rang out!

Now Snoopy can get away with that, but there I was, two days into a new job and heading for a strange place way down in the country and wondering what the heck was I going to write about a fish hatchery. This place, I thought, has to be as exciting as stale bread. Well, that was 1973, and I haven't been quite that wrong about anything since. The Game Commission's striped bass hatchery at Brookneal on the Staunton River was not at all what I had expected. I recall driving down the road thinking of biologists in white lab coats in a stainless steel environment cranking out little striped bass with computer-like accuracy. The Brookneal facility in '73 was 10 years old, housed in a small building and shed that were no more than "adequate," and run by a dedicated team of individuals, none of whom even remotely fit my stereotype of a scientist.

For centuries the striped bass was a saltwater fish that migrated to fresh water to spawn. However, a totally land-locked freshwater population developed in South Carolina immediately after Lakes Marion and Moultrie were developed in the Santee-Cooper system in the mid-1940's. Another such population exploded on the scene after the John H. Kerr Reservoir (Buggs Island to Virginians) was developed along the Virginia-North Carolina border in the 1950's. The two developments created a nationwide demand for striped bass for introduction into the country's fresh waters.



VCGIF photos

In 1963, Virginia decided to establish a striped bass hatchery on the Staunton River near Brookneal. The Brookneal location was chosen because of its proximity to the Kerr Reservoir population's known spawning areas. The original facility was located about four miles down the river from the present location on Radio Road in Brookneal, and its total physical complement consisted of a 12- by 28-foot shed, a pair of military surplus canvas water storage tanks, an antique diesel generator, a pair of gasoline pumps and some hatching jars. Its water supply came directly from the often very muddy Staunton

River. Jack Hoffman, now chief of the fish division, and Bill Neal, now assistant chief of the division, were in on the operation. At the time, Bill was fresh from a striped bass-related project with the U.S. Fish and Wildlife Service in South Carolina and not long out of North Carolina State University. In its early days, the hatchery was important but low on the Commission's funding priority list. More important, the hatchery staff was breaking new ground. Workers in only North and South Carolina had successfully hatched striped bass eggs in manmade facilities in 1963. The North Carolina method, in existence since the 1800's, was quite simple.

Commercial fishermen operating near Weldon, North Carolina, used large, hand-held nets to capture male and female striped bass in the spawning act. They rushed the captured fish to a hatchery located nearby where workers surgically removed the ovulated eggs from the females, fertilized them using one of the netted males and placed them in hatching jars. The fish carcasses were returned to the fishermen, who had been paid for the eggs, to sell again. The South Carolinians, on the other hand, used electro-fishing gear to capture fish before they reached spawning condition, and treated them with chorionic



gonadotropin to induce ovulation. However, the technique was far from perfect in 1963 and it required a massive logistical system to support the fish while they were ovulating.

Virginia opted for the North Carolina system. Using nets, electro-fishing gear and hook and line, the hatchery staff collected several hundred female striped bass in 1963 and surgically removed the eggs from many of them, but no eggs could be fertilized. Finally, in desperation toward the end of the season, chorionic gonadotropin injections were used to induce ovulation in about a dozen fish. The last fish of the season ovulated, her eggs accepted fertilization and 80

percent of them (about 800,000 eggs) hatched. The South Carolina technique had arrived in Virginia.

Flushed with the late 1963 success, the Brookneal staff entered 1964 in a state of euphoria. "This is easy," they thought. They could not have been further from the truth. The technology which by 1964 was working to perfection in South Carolina was very complicated! It required accurate assessments of the fish to be treated, good evaluations of the eggs to be stripped, and spacious holding facilities with good temperature controls for both the adult fish and the hatching eggs. Neither the expertise nor the physical plant existed at Brookneal. In 1964 and 1965, 15 fish were spawned and about a million fry were hatched.

The 1966-67 seasons were years of experimentation at Brookneal. The biological staff was learning; they knew that they must control water temperatures to successfully hatch the large numbers of fish needed for stocking. The staff had a problem, however: money. None was available. Looking back on this period, one might envision a sign on the hatchery door reading, "Rube Goldberg lives here." The method was: invent the system and build it and test it yourself. If the Burrus Land and Lumber Company hadn't built much of the hatchery equipment for no charge during the '63-'67 period, the Brookneal Hatchery wouldn't have survived. During this time, the hatchery was moved to its present location on Radio Road and was slightly modernized. It was equipped with electric lights and, in an effort to control water temperatures, the system was connected to the town of Brookneal's water supply. This did successfully control the temperature but caused other problems. Trace amounts of alum in the water supply affected the young fish so that they couldn't break through their "egg shells." A closed water (recirculating) system was devised. Again, this afforded temperature control but created other, potentially more significant problems. The egg shells deteriorated prematurely. Back to the river, and virtually no control—but one and a half million fish were hatched in 1966, four million in 1967.

By 1968, the tide had turned. The state had decided it wanted the Brookneal facility badly enough to put money into it. New hatchery buildings were designed and built, and a total hatchery water treatment, heating, and cooling system was

installed. The team had control of its environment and fish production rose steadily to peaks of 60 to 80 million fry per year in the early 1970's.

Early in the '70's, an almost accidental incident in Tennessee changed forever the way striped bass are hatched in Virginia. Treated fish placed in a circular tank for holding spawned! Further analysis of the situation by the Tennessee biologists showed that such natural spawning could be repeated. When the water supply entered and exited a circular tank in a specific way, water currents in the tank simulated—to the fish, at least—natural flowing water conditions. When chorionic gonadotropin-treated striped bass males and females were placed in such tanks where adequate temperature controls were maintained, they spawned naturally about 24 hours after treatment. Adult mortality plummeted from near total using manual egg and sperm stripping and subsequent jar hatching techniques, to near zero with the tank method, while the percentage of hatched eggs per female skyrocketed. At the same time, the overall operation went from manpower intensive to manpower shy.

The Brookneal operation was converted to tank culture in 1974. Today, electric pumps carry water from the Staunton through a silt-settling basin, then into a technologically modern facility that can heat or cool hundreds of gallons of water per hour. On the river in April and May, an electro-fishing rig stuns the fish needed for hatchery operation; they are scooped from the water and carried to the hatchery in modern radio-controlled boats and trucks. Some are sorted and returned to the river immediately, but some are treated and spawned. Millions of young fish are hatched in the tanks and siphoned off and taken to rearing ponds on sites where they grow to stocking size. Some of the newly hatched fish are shipped via air transport to other states all over the United States in trade agreements for other fishes which we need in Virginia but cannot economically produce here.

How are 60 million striped bass hatched in Virginia? Where are these fish that grow to 40+ pounds, and how can you catch one? In future issues, we'll answer these questions and take a look at how the Brookneal striped bass hatchery might also help bring these big fish back to the Chesapeake Bay. □



These photos illustrate a major difference between the old system and the new. The photo at right shows the tanks that are used today; stripers are injected with hormones and placed in such a tank to spawn. A worker is taking a sample of the resulting eggs and will estimate how many eggs are present in the tank from the sample. The photo above shows the jars of the old method whereby eggs were stripped from female stripers and hatched at Brookneal. This method, of course, meant a lot of dead stripers.

TASTY MORSEL of the Wild

Morels, or "sponge mushrooms," are fun to hunt and delicious on the table.

story & photo by Dinny Slaughter

Wild food enthusiasts often overlook one of nature's most interesting delicacies, that fantastic morsel, the "morel." Because morels are not especially attractive to the eye, some wild food foragers are wary of trying them. In the Blue Ridge Mountains of Virginia, local inhabitants have hunted the morel for generations and are very knowledgeable about them. From about the second week of April until mid-May, the foragers await a good soaking rain followed by a few warm, sunny days to bring the tasty morel to the surface.

There are seven true morels and all are edible. Each has the pitted and ridged cap that makes it distinctive in appearance. They are about two to four inches high, completely hollow, and are sponge-shaped, like a small tree. This is the origin of their common name, sponge mushroom. Morels are the only mushrooms with the pitted cap and so cannot be easily confused with any poisonous variety. Once you see your first morel peeking through the leaf litter under a canopy of May apples, you just never forget what they look like. Once you've tasted them, you'll search for them each year as we do.

Morels, like all mushrooms, seem to appear overnight, pushing aside leaves and sticks in just a few short hours. They are a short-lived wonder as they last only a few days. They can be found in old orchards, oak forests, and pine woods. Our best results have come when searching under very large tulip poplars located on a ridge facing north. They're occasionally found around old rock piles and in burned-out woods and fields. One

important fact to remember is that morels are almost always found in the same areas year after year. This can save the experienced morel hunter a great deal of time. Remember, the time may vary from year to year but they will usually appear following a soaking rain and a couple of days of warm, sunny weather.

Little equipment is necessary to enjoy a day in the woods in search of the tastiest of mushrooms. Old clothes and a firm container will do. Plastic bags tend to hold too much moisture and should be used only if nothing else is available. At this time of the year there are few insects and the forest floor is still uncluttered so walking is relatively easy. A keen eye to spot the dark head of the morel is all the athletic ability needed for morel hunting.

Eating a morel is a gourmet's delight. Its distinct flavor and texture set it apart from all other mushrooms. Country people sauté morels in butter and serve them with steak and eggs, or over toast. They are also prepared in any way that commercially grown mushrooms are prepared but we find that the less spice and seasoning used the better, as they tend to lessen the flavor of the morel.

When morels are abundant you may find that you have more than you can use. Morels may be frozen with success. A popular method here is to slice them in half, then rinse lightly, drain on a paper towel, spread the halves on a lightly greased cookie sheet and place in the freezer. When the morels are frozen throughout, shake them into a plastic bag and seal tightly. When your taste buds or favorite recipe call for mushrooms

just shake out as many as needed and reseal the bag. Frozen morels must be used in cooked dishes as freezing causes the cell structure to collapse and the moisture is drawn out. They do not need to be defrosted before cooking or before being added to a dish being cooked.

Two of my favorite ways to prepare morels are broiled, and grilled with bacon. To broil, simply cut the morel in half, dip it in melted butter, then in flour and place it under the broiler. Turn after about two minutes. Serve as an hors d'oeuvre or garnish. To grill morels with bacon, cook about 8 slices of bacon until transparent, then set aside to cool. Clean morels and remove stems; leave the caps whole. Combine two beaten eggs with a dash of allspice and a dash of salt, then dip morels in this mix and coat liberally with bread crumbs. Alternate the bacon and morels on skewers and grill over hot coals, turning occasionally until the bacon is browned. Morels may also be used in soups and stews with success but it is best to add them just before serving.

Wild mushrooms make any meal look better, and taste better, too. They can be served raw or cooked with your favorite meat or vegetables, and since the calories are negligible you can eat lots of them without feeling guilty about your diet. Nutritionally, morels have little food value.

Finally, and most important, morel hunting makes for an adventuresome family outing. There is no way youngsters can spend a few hours in the springtime forest, with all its sights and sounds, and not acquire a greater appreciation of Mother Nature's bounty. □



The
Paintings
of
Henry Cole
text by Martha Sutton



Little Blue Herons

Prothonotary Warblers





Northern Pintails

What better way to spend a spring day than birdwatching? Purcellville artist Henry Cole has beautifully captured some feathered residents of Virginia.

The prothonotary warblers are the only eastern warblers

that nest in tree cavities or other crannies. These fairly common birds usually select a low site along streams or surrounded by sluggish or stagnant water. Their song is a series of loud, ringing "zweet" notes.



Hooded Merganser

Another bird pictured here is the uncommon hooded merganser. During breeding season, hooded mergansers are most likely found on woodland ponds, rivers and sheltered backwaters.

The little blue herons are slow, methodical feeders. They can be found in freshwater ponds, lakes, marshes and coastal saltwater wetlands. In breeding plumage, their heads and necks become reddish-purple, and their legs and feet become black.

The northern pintail ducks are abundant and widespread. They usually choose to live in marshes and areas with ponds and lakes. In the winter, they often feed in grainfields.

All four of these bird species can be found at Ragged Island,

a 1500-acre Wildlife Management Area in Tidewater Virginia. Within the WMA is a "Watchable Wildlife Area," designed to encourage the public to become more aware and appreciative of Virginia's wildlife resources. A nature trail featuring interpretive signs allows you to take your own "guided" tour of the area. A boardwalk provides access through the tall grasses of the marsh.

The Watchable Wildlife Area was officially dedicated this spring and is open to visitors. For a brochure on Ragged Island, write to the Game Commission, P.O. Box 11104, Richmond, Virginia 23230-1104. (Please write "Ragged Island Brochure" on the envelope.) □

—May Journal—

edited by Mel White



John Heslep

RESPECT Certificate Presented

Officer E. M. Ashworth recently presented Mr. Vernie Kennedy, of Bedford County, a certificate of merit from Operation RESPECT. This certificate was awarded to Mr. Kennedy for his involvement in upholding the ethical standards of Operation RESPECT. On the night of December 1, 1983, Officer Ashworth became involved in the pursuit of a vehicle for spotlighting deer in the Wheat's Valley section of Bedford County, and radioed the County advising them of his location. Mr.

Kennedy, who lives in the area, overheard the radio message on his police scanner. He immediately got in his car, and pulled out to the edge of his driveway. When Officer Ashworth and the vehicle he was pursuing came in sight, Mr. Kennedy made a left turn out of his driveway, causing the vehicle to stop. Two subjects were arrested for spotlighting deer. Both were subsequently convicted and fined \$250 for spotlighting, and the driver was convicted of failing to stop for a law enforcement officer. □

Letters

Thank You's

My 5th grade class at Glen Forest School, in Falls Church, Virginia was very lucky to receive the beautiful Songbird Study Kit featured in your February Journal.

I wish to thank everyone involved in this generous program.

The materials are perfect—from the well-thought-out lesson plans, fine posters and charts, to the hands-on activities—the set of cards, bird feeder and bird house. As a teacher, I was very impressed by the visual and manipulative variety of the materials. You made our class very happy!

Donna Walters
Glen Forest School
Falls Church

The staff and students at Gloucester Middle School would like to thank you for the Songbird Study Kit.

We are looking forward to bird-watching and learning all about the birds that visit our feeders.

Thank you once again for such a nice gift.

Barbara Priest
Librarian, Gloucester Middle School
Gloucester

Today our school received the Songbird Study Kit, a Non-Game Wildlife and Endangered Species Project. Thank you for providing such an excellent unit of study. The students at Pinchbeck Elementary School will certainly make good use of this kit.

I know that elementary school principals and teachers throughout the state appreciate such programs as this one supported by the Non-Game Wildlife and Endangered Species Project. With the public's support and the help of the Virginia Commission of Game and Inland Fisheries, the Virginia schools will be able to instill

—May Journal—

in young people an appreciation for wildlife.

Keep up the good job.

Thomas L. Walls
Principal, Pinchbeck Elementary
School
Richmond

A Conversion

Just finished reading *Virginia Wildlife* from "kiver to kiver" and enjoyed, as usual, both words and pictures.

Saw one flaw worth nit-picking, and that is the statement under WATER where it says: "Water has its greatest density at 4°C (46°F)."

Actually, that's a half-truth because water is heaviest at 4°C but that converts into 39.2°F. And here's a table for converting centigrade into Fahrenheit, in your noggin: $C \times 2 - 10 + 32$. Thus: $4C \times 2 \text{ equals } 8$, minus 10 equals 7.2 plus 32 equals 39.2°F.

"Uncle Homer" Circle
Angling Editor
Sports Afield

Hats Off to the Design and Layout Staff

It is a rare occasion that I enjoy writing a check but this check for renewal and all of those over the years have been a pleasure to write.

I am an old time printer and typographer. Each time you change the format of this fine publication I feel that this is it but somehow, and much to the credit of your staff, you always succeed in improving the previous years. My thanks and admiration to you and the staff.

The content as presented is always excellent, so much so that I feel compelled to read everything even though the particular subject may be one I care little about. As we both know your design and layout staff are the "real catalyst."

It is not intended by my statement above to detract from the fine articles written in each issue.

We in this state have a most won-

derful publication and thanks to all who contribute to its greatness.

William E. Byram
Arlington

Thank you for your nice comments about our design and layout "staff": she is Robin Schroeder, our art director, and she does it all by her lonesome.—
Managing Editor

Field Notes

Teachers Go Back To School

Approximately 300 public school teachers recently completed a workshop sponsored by the Virginia Game Commission, and joined the ranks of Virginia's volunteer hunter education instructors. The workshops were offered in each of the state's six law enforcement districts, and involved mainly seventh, eighth and ninth grade health and physical education teachers.

The workshops consisted of training in the history of hunting, firearms safety, safe gun handling, bowhunting, muzzleloading, first aid, home firearms safety and ethics, as well as hands-on training. The workshop emphasized the need for education in firearms safety, since over half of the firearms accidents that occur annu-

ally happen in the home. Proper care and storage of firearms were stressed as was safety in the field. Each teacher was furnished an instructor manual, and a list of equipment available through the hunter education program.

The workshops were funded by the Game Commission at an approximate cost of \$30,000 and coordinated through the State Department of Education. Mr. Charles Hamm, Director of Health, Physical Education and Driver Training, coordinated the workshops with school districts throughout the state. Mr. Harold Lakey and Ms. Jeane Bentley, associate directors from Mr. Hamm's office attended the workshops to emphasize the importance of the teachers' involvement in the program.

The workshops were designed so that those who were interested could attend an expanded 16-hour session. The expanded session was approved by the state for one non-college credit that could be used toward the teacher's recertification.

Because there are only 125 officers in the enforcement division for the entire state, it is almost impossible for

Teachers receive "hands on" training in handling firearms.



Jeane Bentley

Jeri McCoy receives a certificate for completion of the course from Lt. Don Miller.



John Heslep

the game wardens to increase their present efforts in hunter education. The majority of our civilian instructors are involved in evening courses for adults. Their volunteer time is filling an important need, but is not reaching enough of our youngsters. James N. Kerrick, sportsman education administrator for the Game Commission, said the addition of these teachers will enable us to expose more young people to hunter education. □

by Lt. John Heslep

Personalities

Dan Shuber

Dan Shuber was still in college when Charlie Sledd hired him to work part-time for the fisheries division. "He came to us highly recommended," Charlie said, by a professor they had both worked under at Virginia Commonwealth University. "At that time I was looking for someone to work at Lake Anna," he said, "and Dan had already been working there."

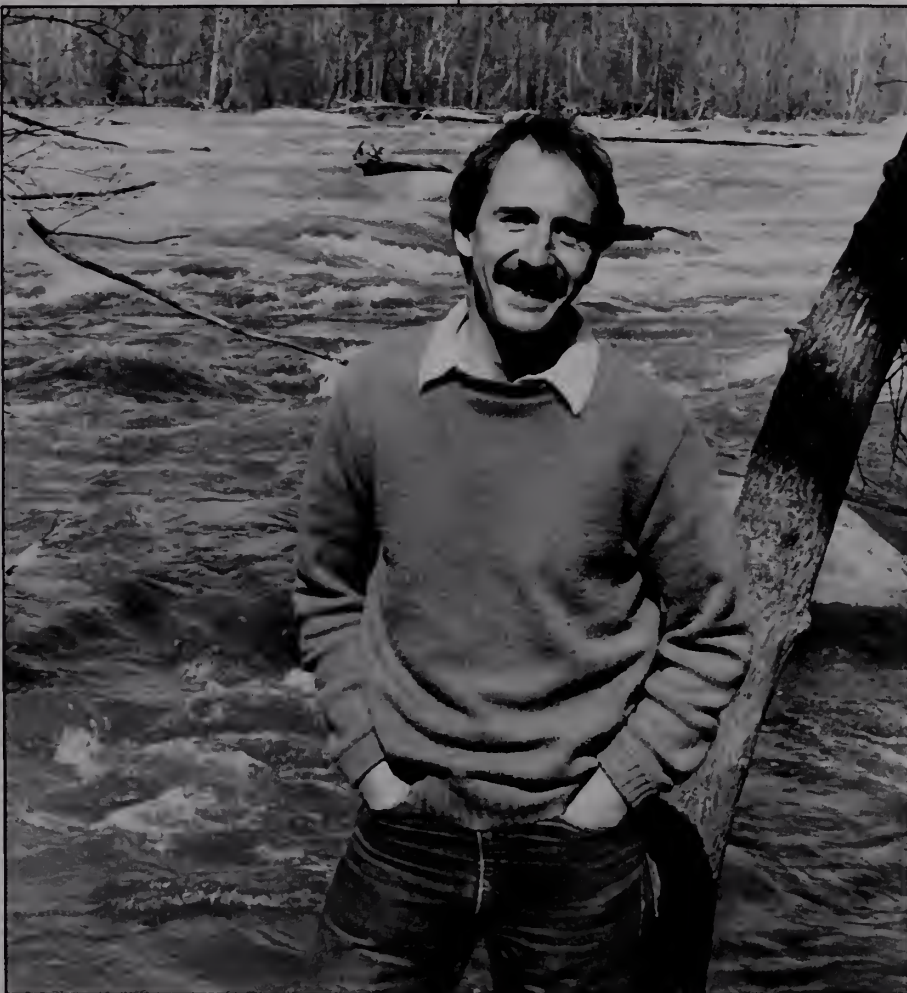
That was March of 1976, Charlie said, "when longer hair was more in

vogue, and his was longer than normal."

Though because of his long hair, Dan now jokingly says, "I wouldn't have hired me," he was not only hired for the part-time job, but he began working full-time for the fisheries division in July of 1977. He is now an assistant fisheries biologist.

Dan said that he likes working outdoors "more than anything else" and that he gets a lot of satisfaction from the work that he does. "I knew from the start that this is what I wanted to do. I've always been an admirer and student of wildlife."

Dan graduated from VCU in 1977 with honors and a bachelor's degree in biology. He is now working toward his master's degree in mathematics



Francis N. Satterlee

with a concentration in computers.

Last May he bought an IBM computer which he now uses in his office. He hopes to help the Game Commission "become more computerized."

"In a year and a half, people who'll have micro's on their desks will wonder how they ever got along without them. Now they wonder what they would do if they had them."

Except for experimenting with computers, he said, "I spend as little time as possible indoors." His hobbies include whitewater canoeing and rafting, skiing, fishing, volleyball, scuba diving, bird watching and snorkling. "I'll do anything 10 times to see if I like it or not," he said. "Being outdoors is great, and being near the water is even better."

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In the summer, Dan works part-time as a river guide on an eight-mile raft trip down the James River through Richmond. "It's good to see the beginners change from being afraid of the water to enjoying it. You as a guide have to give them both a thrill and peace of mind."

While he enjoys rafting, white-water canoeing is his true passion. This spring he plans to tackle Goshen Pass on the Maury River west of Lexington. It is one of the hardest stretches in Virginia, he said.

He has already paddled other sections of the Maury as well as the Potomac, North and South Anna, Appomattox, Shenandoah, Rapidan, Moormans and Tye, to name a few.

In the summer, Dan prefers to play volleyball at the beach, but he continues to play, even when the weather won't permit it on the beach. He is now a member of several indoor teams in Richmond.

His other favorite pastimes when he's closer to the ocean are snorkling and scuba diving. He has been snorkling in California and North Carolina and scuba diving in Virginia and Florida.

When indoors, and not working on a computer, Dan likes to do "stained glass renditions of living things." He makes stained glass mirror frames and trees and fish for window hangings. He gives most of his work away.

Several years ago, he was involved in the Big Brothers organization. Though his "little brother" is now too old to be a part of the program, he still keeps in touch with Dan and recently told him that he plans to join the Navy.

Dan grew up in a log cabin on a dead end dirt road on Lake Jackson in northern Virginia. "I've never mowed a lawn in my life," he said, "but I've raked a lot of leaves." The cabin was in the woods.

His family was among the first to live by the lake year-round. Most of the other homes were summer cottages for people who worked in Washington. The cabin was heated with wood, and all five children shared the loft as a bedroom when

they were young. Dan had an older brother and an older sister and two younger sisters.

Because he lived so close to the lake, he learned to fish and waterski at a young age. "I was a fishing machine," he said. "By the time I was five I could outfish anybody." He still enjoys it, he said, and now has about 10 fishing rods.

In 1972 he graduated among the top five students of his high school class. He went to the University of Miami for a semester, but, finding it too academically restrictive, he went to North Dakota for a few months.

When he returned to Virginia, he helped finance his education at VCU on a research grant to study fish populations in the North Anna River drainage basin (which led to employment with the Game Commission). Between his sophomore and junior years, he worked as a painter for awhile, then worked in a factory in New Hampshire.

He said he enjoys the people he works with. "We get together to go paddling or fishing," he said. "It's a young, fun group." □

by Martha Sutton

D.U. and VEPSCO House Wood Ducks

Volunteers from the Louisa Chapter of Ducks Unlimited along with biologists at Vepco's North Anna Power Station environmental lab have recently mounted 17 wood duck houses in secluded areas on Lake Anna.

The wood duck houses were purchased in a joint effort by the sportsman's group and Vepco. Ducks Unlimited raised money for the houses by auctioning a wildlife art print donated by Bill Bolin, a Vepco senior biologist.

The plastic, egg-shaped houses are designed to attract nesting wood

ducks along Lake Anna. Waterfowl lovers in Louisa County note that waterfowl in increasing numbers are becoming full time residents instead of migrating each year. According to Howard Scheurenbrand, president of the Louisa Chapter of Ducks Unlimited, "you can hardly find a pond now that doesn't have a pair of geese using it." This is especially true of ponds and lakes that contain islands. □

by Sgt. W.L. Parker

About The Authors

Amy Hauslohner is a resident of Troutdale, near the location of the Mt. Rogers Naturalist Rally. This is her first contribution to *Virginia Wildlife*. **Harry Murray** of Edinburg is the proprietor of Murray's Fly Shop; he writes for *Virginia Wildlife* frequently on fly fishing. **Bill Cochran** is outdoor writer for the *Roanoke Times-World News*; his article on smallmouth bass appeared in last month's issue. Journalism student **Martha Sutton** is a sophomore at the University of Richmond; she is from Low Moor (near Covington). Martha was an intern on the *Virginia Wildlife* staff earlier this year under the Quill Program, a competitive liberal arts scholarship program which awards students with internships in their chosen fields. **Gregory Mertz's** article explaining the ways animals use color was published in the August 1981 issue. Mertz lives in Needham, Massachusetts. **Mel White** is senior editor of *Virginia Wildlife* and assistant chief of the Commission's education division; **Bill Neal**, who got his start at the agency in its burgeoning striper program, is now assistant chief of the fish division. **Dinny Slaughter** of Front Royal has been a frequent contributor to *Virginia Wildlife*, both as writer and photographer. □

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Young Sportsmen Awarded

Four Cub Scouts from Leesburg Pack 954 have received the Young Sportsman Award from the National Shooting Sports Foundation in Riverside, Connecticut. They are (from left)

Christopher Alan Barber, Richard J. Costello, Christopher Gates and John J. McGovern. To earn the award, the Cubs took a test on conservation and hunter safety and met requirements at the rifle range under adult supervision. The award was presented by Judge Thomas D. Horne, Cubmaster of Pack 954.

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JOHN W. TAYLOR

Bird of the Month

The Blue-Winged Teal

Despite widespread loss of habitat, the blue-winged teal remains among the most numerous and best known of North American waterfowl. According to recent surveys by the U.S. Fish and Wildlife Service, it ranks third in total numbers, following the mallard and pintail. It is appreciated by the hunter, who finds it an elusive target and a tasty addition to the game bag, and by the naturalist, who values it because of its beauty and the life it gives to the marshes.

Perhaps its adaptability is the key to its success, to the relative stability of its numbers. Though its preferred habitat is the open grassland of the northwestern prairies, it nests as well in the lakes and marshes found in the boreal forests, the rocky mountains and the midwestern states. There are even breeding blue-wings along the Atlantic Coast and in Texas and Louisiana.

Especially adaptable are these east coast and gulf coast populations. Nesting patterns there seem to change with climatic conditions. When streams flood the lowlands, and leave rainwater pools, more blue-wings stay in the south to nest. In seasons when there is heavy flooding on the upper Mississippi, teal remain to nest in the newly created wetlands.

Birds nesting in the prairies also adjust to changing weather and water conditions. When drought hits a part of their range, they readily move to another area, not so affected. Few species of waterfowl are as flexible.

Once a suitable nesting site has been selected, blue-wings immediately claim territorial rights. Their

required home range, smaller than that of other wildfowl, is dependent on the amount of cover available. The presence of open water is not essential.

So anxious to nest are they, that egg-laying begins when the nest is but a scrape in the ground. Nearby plant material, mostly grasses, is later used to form the nest bowl. As more eggs are laid, the female plucks down feathers to soften and line the interior.

One egg a day is laid until the full clutch of eight to 11 eggs is complete. An incubation period of at least three weeks is required to hatch the smooth, unmarked, creamy-tan eggs. Incubation seems to begin just before the last egg is laid.

Young teal often have to walk some distance to the nearest open water. One recorded distance was 2.2 miles. Once the brood has reached water, its wanderings are determined by the food supply. In six weeks, the young are able to fly.

Care of the young is entrusted completely to the female. Drakes forsake the hens two weeks before incubation is ended, and gather in flocks before going into molt. Fall migration begins soon after. Some blue-wings, nearly all males, are already en route to winter grounds by late July and August.

The teal's migration patterns are the most complex and wide-ranging of all North American ducks. From staging areas in the prairie states and provinces, they fan out in all directions. A large segment heads east, not turning south until they reach the Atlantic. Some take more southerly courses and others move southwest to California.

They fly long distances without stopping, so there are few concentration points along the way. The marshes bordering the Chesapeake and Delaware Bays are major

stopping-off places. Here, large flocks of blue-wings congregate in early September, feeding on the ripening wild rice. They remain only a few weeks before continuing a journey south, most of them eventually reaching Venezuela and Guyana.

Two other flyways are followed by these teal; one leads from Manitoba and Minnesota to Florida, where many blue-wings winter. Another extends from Saskatchewan across the great plains to Texas and Louisiana. A majority of these birds end up below the border as well, some as far as the equator. Bands have been recovered in Brazil and Peru, even below the equator. One banded immature bird made the 3,800-mile flight from the Athabaska Delta to Venezuela in one month.

Teal begin the northward trek in March, reaching Virginia late in the month. Most of them pass through our latitudes in early April, leaving behind a few scattered pairs to nest in the salt marshes of the Eastern Shore. Young birds, unable to fly, have been discovered at Seashore State Park and near Lynnhaven Inlet.

Controversy surrounds these birds that remain to nest along the Atlantic coast. In 1956, taxonomists separated them as a distinct race, on the basis of darker coloration and larger size. Though accepted by most ornithologists, others suspect the validity of this race.

Also controversial is the etymology of the term "teal." Some sources say that it derives from the French *cercelle*, the name given the little European teal. Others maintain the word is related to the Dutch *taling*, which has connotations relating to reproduction and propagation. The reference here would be to raising the birds in captivity. □

by John W. Taylor

